Precision Fires Rocket and Missile Systems PMO

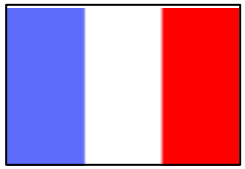
7th International Artillery and Indirect Fire Symposium and Exhibition

MLRS / ATACMS Around the World

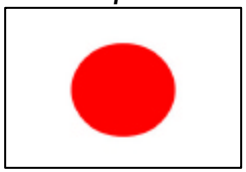
The Netherlands

Germany

France

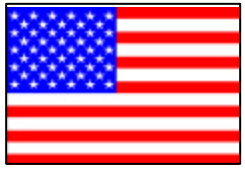


Japan

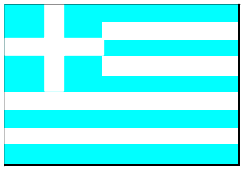


Turkey

United States



Greece

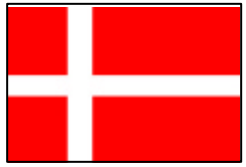


United Kingdom

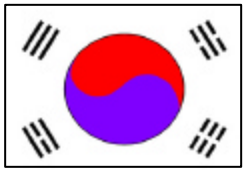
Egypt

Bahrain

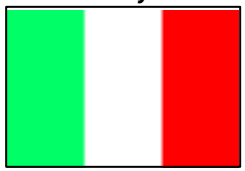
Denmark



Korea



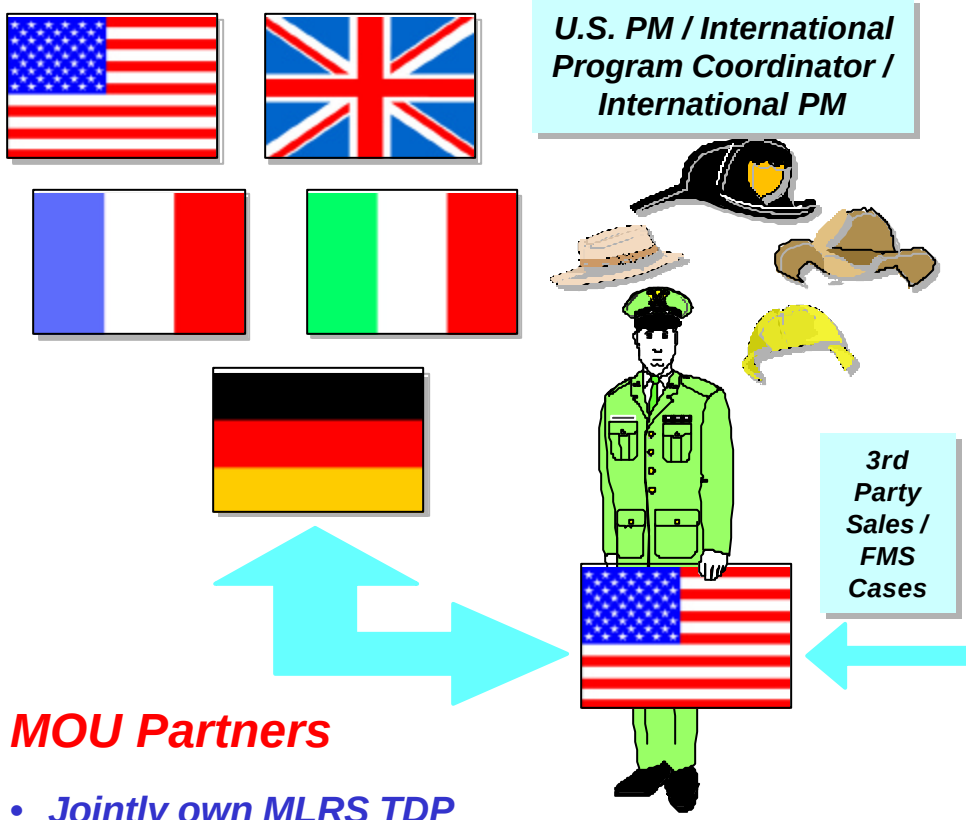
Italy



Israel

Norway

MLRS International Relationships



Netherlands
Bahrain
Israel
Turkey
Greece
Japan
Norway
Denmark
Korea
Egypt

3rd Party Sales

- Need approval of MOU partners to buy MLRS
- Pay recoupments to MOU partners
- Contribute annually to engineering services

Poland
Jordan
Switzerland

MOU Partners

- *Jointly own MLRS TDP*
- *Agree on hardware and software baseline*
- Agree on 3rd party sales and production source
- Have structured management forum
  - Executive Management Committee (EMC)
  - Joint Steering Committee (JSC)
  - Joint Engineering Services

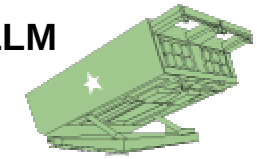
Precision Fires Rocket and Missile Systems

Launcher (M270A1 and HIMARS)

Precision Fires Rocket & Missile Systems
M270 to M270A1 Recapitalization

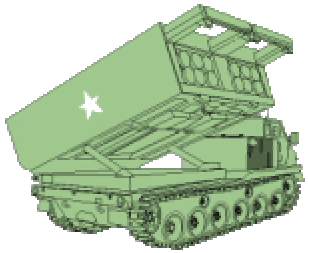
Demate

LLM

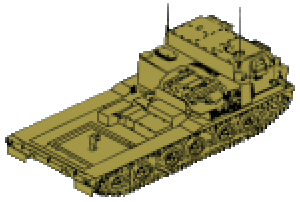


M269

M270



M993



Carrier

Selected Upgrade

IFCS

ILMS

Rebuild

ECPs
MWOs

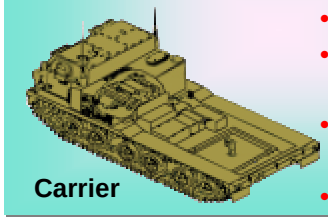
LLM

Carrier

Cage

Turret

Base



Carrier

- Power Pack
- Suspension System
- Electrical Components
- Cab & Hull

Reassembly

M269A1

M270A1

M993A1

Precision Fires Rocket and Missile Systems
MLRS M270A1 Improved Launcher

System Description

- Full Tracked, Indirect Fire, Weapon System
- 3 Man Crew / 12 Rockets / 2 Missiles
- Improved Fire Control System
- Improved Launcher Mechanical System
- Improved Responsiveness & Survivability
- Fires All MLRS Family of Munitions
- Provides Growth for Future Munitions
- Faster Throughput, More Memory
- Enhanced Diagnostics Capability
- Increased Reliability

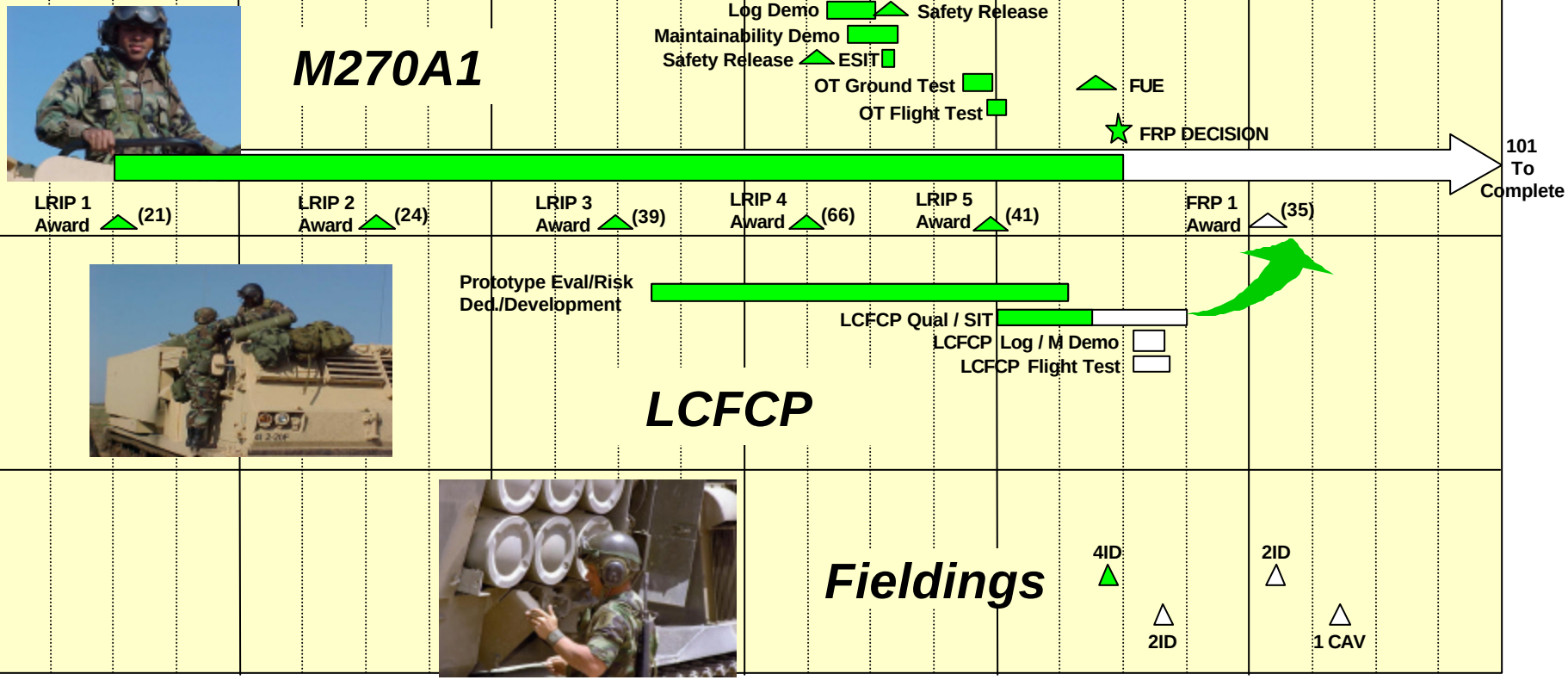
Accomplishments Last Six Months

- Full Rate Production Approved
- Type Classification to, “STANDARD”
- FUE Fielding (4th ID) Completed
- LCFCP Mini TOEL Dallas Conducted
- Echo Software Release / Issued
- Conditional Materiel Release Received
- System Safety Assessment Completed
- Successful IOT&E / LRIP V Awarded

Next Six Months

- BLOCK II Firing
- LCFCP Firing
- LCFCP Maintainability Demo
- Foxtrot Software Release / Issue
- FSP #1 Award
- 2 Infantry Division Fielding

Program Schedule



HIMARS System Overview


Rocket Firing

In Summary:

A C-130 transportable M270A1 mounted on FMTV truck chassis!


C-130 Transportable

M270A1 like Reload System


On-board Fire Control System

Lethal Fire Support for Light and Early Entry Forces

HIMARS Program History

- Nominated as Tech Demo program under RFPI ACTD, Nov 94
- Four Prototype launchers were designed, fabricated, and delivered by Lockheed Martin in two years
- Successfully participated in:
  - RFPI Field Exercise, Jul-Aug 98
  - 2 year Extended User Evaluation (Sep 98 - Sep 00) with 3-27TH FA Regiment, Fort Bragg, NC
- DCSOPS approved XVIII Airborne Corps' request to retain system at Fort Bragg past EUE (until FY05 FUE)

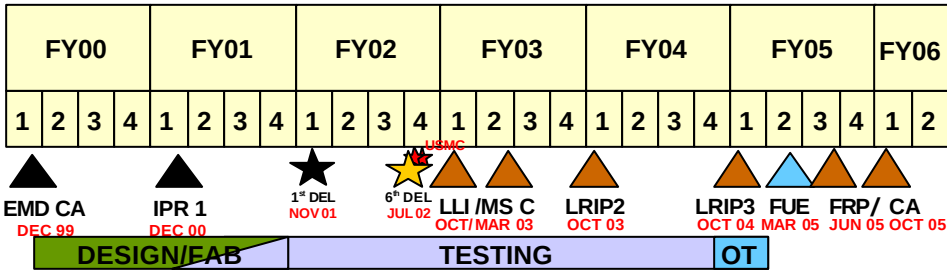
- Nominated as one of the Army's seven "Core" systems supporting the Transformation Initiative. Designated as Army's Legacy to Objective force delivery system to support CINC's all weather deep fires fight
- HIMARS Army Acquisition Objective (AAO) increased from 363 to 1356. Future P3I platform cut-in begins at launcher 663

FY00 & FY01 Congressional Plus-ups issued to…
accelerate the EMD program and fund cost reduction initiatives

HIMARS Maturation Launcher (XM 142)

- *Supports Army Transformation Initiative*
- *Designated Army's Legacy to Objective Rkt/Msl delivery system*
- *EMD Launcher delivery on schedule, 23 months after CA*
- *Army revised AAO from 363 to 1356 launchers; 705 funded*

PROGRAM SCHEDULE



SYSTEM DESCRIPTION

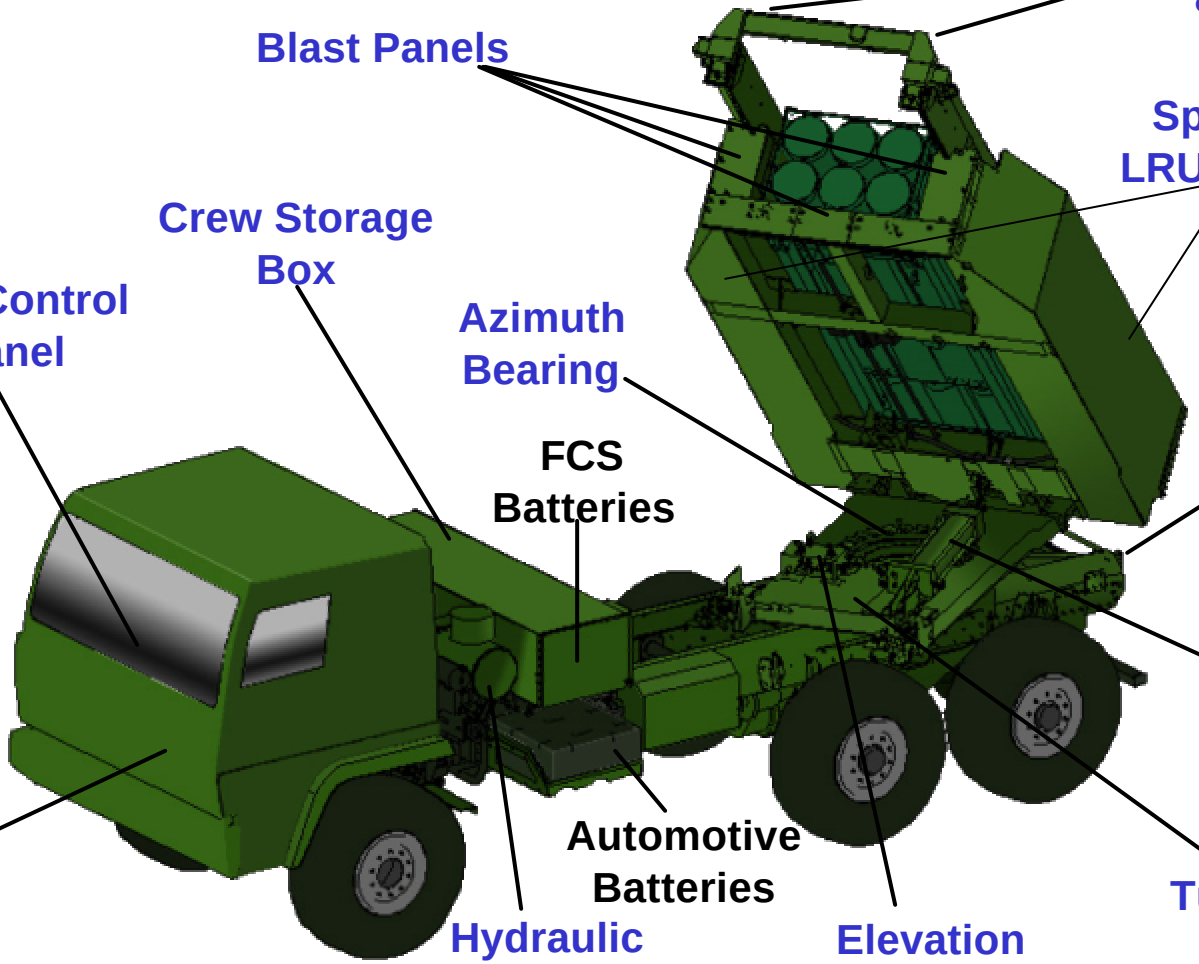
- MLRS launcher mounted on FMTV M1096A1 chassis
- Transportable by C-130 aircraft (Peacetime FLS)
- Fires entire MLRS/ATACMS family of munitions
- Shorter Chassis permits firing over the Cab
- Stores/fires single rocket/missile pod
- Boom & Hoist Re-Load system like M270A1
- Max Feasible Commonality with tracked M270A1
- Will be upgraded w/ LCFCP, EPLRS, & Full Applique
- Three Man Crew / Man-Rated Cab
- MTBSA(Aborts) $\geq$ 58 hrs, MTBEFF (Funct) $\geq$ 34 hrs

NEXT SIX MONTHS

- Move launcher integration of 4-8 to Camden line
- Government receipt of launchers #'s 4, 5, & 6
- Continue (Lnchr/RSV/ RST) vibration test/analysis
- Complete CDT & continue PQT test events
- Complete Flight Phase I & start Flight Phase 2 Program @ WSMR
- Initiate Ballistic Survivability Program testing
- Conduct Alpha Contract Activity for LLI/LRIP
- Conduct Alpha Contract Activity for EMD upgrades

HIMARS
EMD Launcher Design

Blue Text: Signifies upgrades/significant redesign from Prototypes



Summary

What HIMARS provides:

- *HIMARS* meets Army's Modernization Goals for the 21st Century
- *HIMARS* provides Army with a "Legacy to Objective Force" delivery system that supports CINC's all weather deep fires fight
- *HIMARS* meets Army's Intent of providing light forces with a more *deployable, lethal, survivable, and tactically mobile* long range system
- *HIMARS* provides early entry forces the capability of conducting decisive combat operations
- *HIMARS* maximizes "lessons learned" from the Prototype's successful ACTD and EUE, ensuring an efficient evolutionary acquisition approach

Selected by Army Strategic Planners as...
one of the Army's Seven Key "Core" Transformation Systems

PFRMS Launcher Platform Procurement

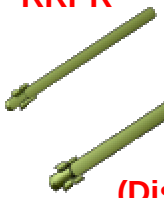
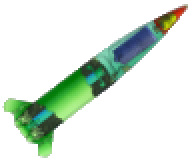
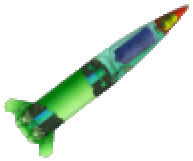
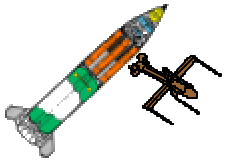
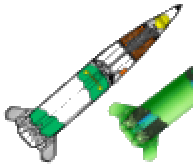
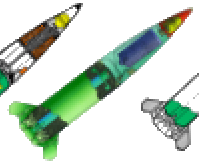
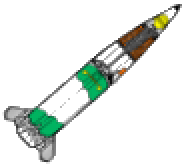
	FY98*	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	Total
M270A1 (U.S. Upgrade)	21	24	39	66	41	35	31	29	32	9				327
FMS Kits														TBD
M270A1 (New)					10									10

***FY98 Does Not Include Rebuild**

	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	Total
HIMARS (U.S.)	34	24	36	40	55	55	62	62	62	55	55	55	55	1356

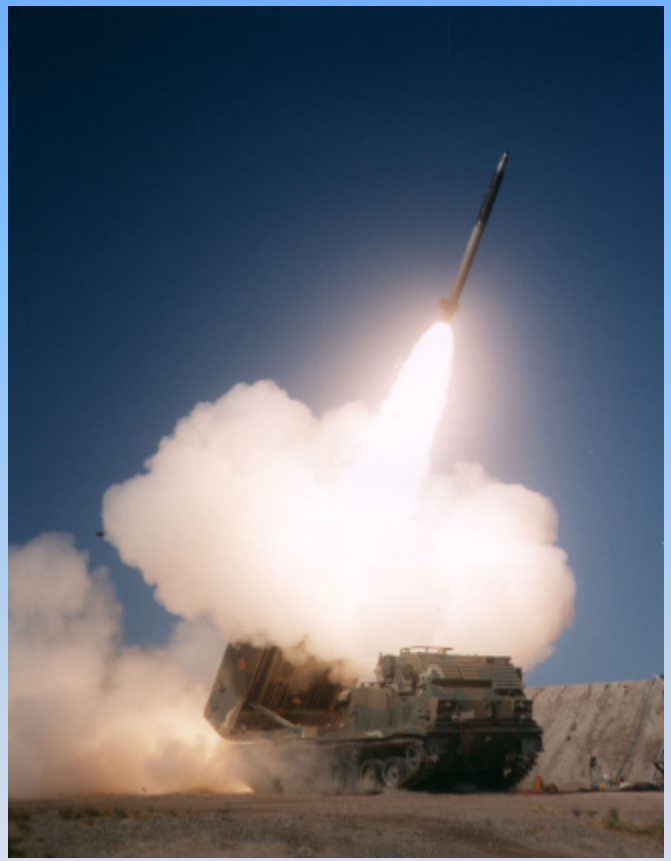
***Total Launcher Requirement = 1356**

Precision Fires Rocket & Missile Systems
Products and Systems

Concept and Technology Development	System Development and Demonstration	Production and Deployment	Operations and Support
MSTAR / LAM  GMLRS P3I (Unitary) 	ER-MLRS  M30 (GMLRS)  M26A1 DPICM (SDF)	M26A2 FMS  RRPR 	RRPR  M26 / M26A2  M26 (Disposal)
 ATACMS - Earth Penetrator (ACTD)  ATACMS - Unitary (ER)	 ATACMS II P^{3}I BAT	 ATACMS IA  Quick Reaction Unitary  ATACMS II BAT	 ATACMS I / IA

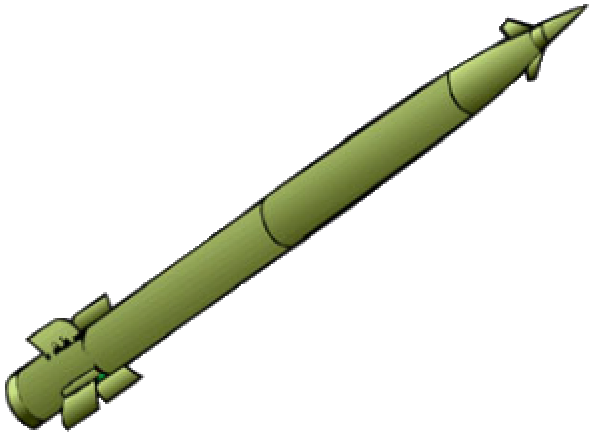
Precision Fires Rocket & Missile Systems

GMLRS



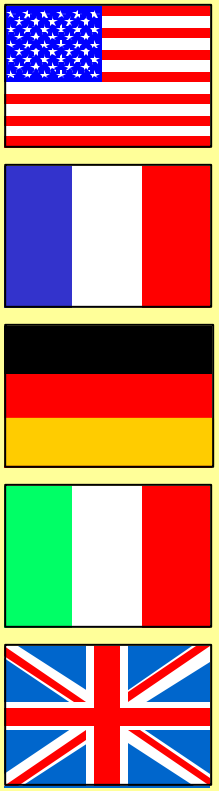
GMLRS
MOU SUPPLEMENT NO. 4

- *Objectives*
  - Establishes a five nation MOU for development of a Guided MLRS (GMLRS) between the U.S., FR, GE, IT, and UK
  - Achieves the required operational capabilities while avoiding costly duplicate development programs
  - Ensures Partnership benefits of:
    - -- Common logistics and support concepts
    - -- Joint production
    - -- Collaboration for future GMLRS variants
- *Management*
  - Existing basic MLRS MOU structure
    - -- Joint Steering Committee (JSC)
    - -- Executive Management Committee (EMC)
  - Co-Product Managers (U.S. / EU)
- *Financial Arrangements*
  - Establishes cost share (50% U.S. / 50% EU)
  - Establishes funding profile
- *Data Rights Disclosure Procedures and Security Procedures Outlined*



Multinational GMLRS Program

Joint Program



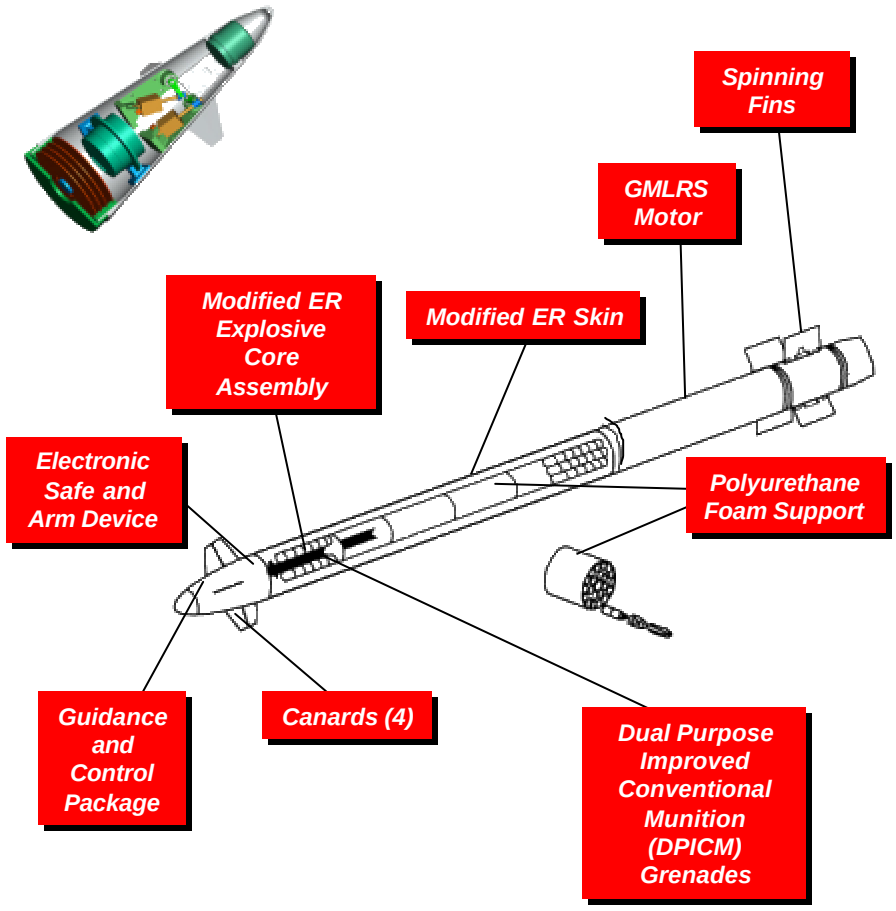
ICD Pod / SW / Motor	ICD Pod / SW / WH	Pod / SW ICD
UG	UG	UG	
GR	GR	New	
GMLRS Motor	Basic	BA — ER — GMLRS Motor	Future Rocket

UG: Universal Guidance
GR: Grenade
BA: Basic
ER: Extended Range

National Program

GMLRS - Description

GMLRS Rocket



System Description

Description: ***The GMLRS is a major upgrade to the M26 series MLRS rocket with the objective of integrating a Guidance and Control (G&C) package and a new rocket motor to achieve greater range and precision accuracy***

Characteristics:

- ***Demonstrate 3 mil capability with inertial guidance and less than 1 mil capability with GPS aided IMU***
- **Significantly reduces number of rockets required to defeat target**
- **Associated reduction in logistics burden**
- **Enhances rapid force projection**
- ***Enhances delivery of DPICM and future munitions at extended ranges with precision accuracy***
- **Improves survivability of Blue Force**

Precision Fires Rocket & Missile Systems
GMLRS

System Description

- Integrated Guidance and Control (G&C) package
- Achieves greater range and precision accuracy
- Improved accuracy reduces the number of rockets required to defeat targets

Accomplishments Last Six Months / Status

- Rocket Motor Qualification Test Complete
- Control Actuation System (CAS) Qualification Complete
- ESAD Qualification Complete-Initial Safety Certification Received
- Guidance Set (GS) Qualification Complete
- Complete System CDR
- First GS Delivery for HWIL
- EDT Flight Tests # 1- 4 Successful
- EDT Rocket Integration

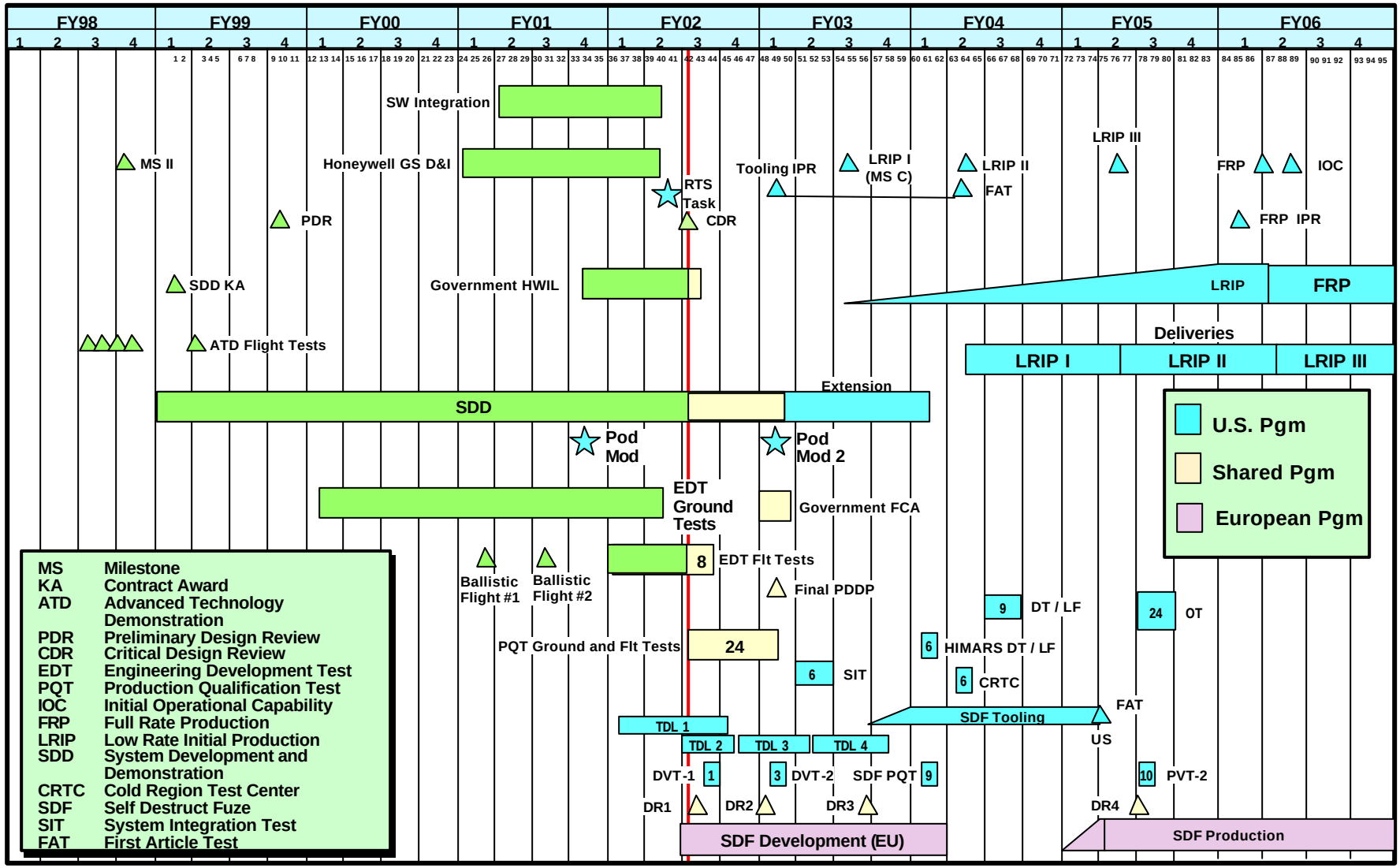
System Characteristics

- Range of 60 km or greater
- 3 mil accuracy with inertial guidance
- 1 mil accuracy with GPS aided by the Inertial Measurement Unit (IMU)
- Reduced payload to 400 plus grenades

Next Six Months

- TEMP Approval
- Integration Testing
- EDT Flight Tests # 5 - 6
- Hardware in the Loop Facility Supports EDT/PQT Tests
- PQT Flight Tests Begin
- Flight Test Data Analysis
- Flight Software Update

GMLRS Schedule



Precision Fires
Rocket and Missile Systems

On Target for the 21st Century

Deep Strike

Superior Capabilities

Precision Strike

Quick Reaction Deployment

Proven Reliability

Lethal Fire Support

Legacy to Objective Force

High Mobility